

Cost & Training Effectiveness Analyses (CTEA) for Large-Scale Simulations

Training FWG
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ODUSD(R)

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Cost Training Effectiveness Analysis (CTEA) Process

ODUSD(R) - READINESS & TRAINING

Status: 9803-5 - DoD IG Report ('97) concluded that “effectiveness of large-scale computer simulations had not been demonstrated for field training exercises in terms of training mission and cost-effectiveness.”

- Past efforts have not provided methodologies and processes needed to support evaluation of large-scale simulations.
- Separate efforts underway in Impact Assessment, Return on Investment (RoI), Learning Methodologies, and Training Effectiveness.

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• Coordination Plan formulated to leverage Service and DMSO efforts

Cost Training Effectiveness Analysis (CTEA) Process

- Current Efforts Underway
 - DMDC: Cost and Training Effectiveness Evaluation of Large-Scale Simulations - Tech Report & Data Base
 - LMI: CTEA - Cost Orientation
 - IDA: Training Effectiveness - Metrics/Measures of Effectiveness
 - DMSO: Quantify the Impacts of M&S - MSMP Objective includes benefits to support investment
 - Army: Impact Analysis - Phases I & II completed
 - Navy: Learning Methodology Sub-group for JSIMS
- IG: Sep '99 DUSD(R) Memorandum Action Completed

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Cost Training Effectiveness Analysis (CTEA) Process

- DMDC: Training Effectiveness Evaluation of Large-Scale Simulations
 - Technical Report “Evaluating Large-Scale Training Simulations”
 - Provides a framework for Evaluation (“how to manual”)
 - Coordination and Review Completed
 - Training and Cost-Effectiveness File (TCEF)
 - Operational Data Base
 - Contains Evaluations and Research Summaries
 - Information summary and analyses in Technical Report

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How is TCEF Used?

- Research and Analysis tool for training evaluators, developers, and analysts
- Typical queries
 - Estimate the training- and cost effectiveness of various types of training
 - Identify procedural guidance for conducting evaluations
 - Identify relevant examples of published evaluations
 - Locate representative studies, analyses, and reviews
 - Determine military requirements (e.g., directives, instructions) for conducting studies during training system development

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Cost Training Effectiveness Analysis (CTEA) Process

- LMI: CTEA - Cost Orientation
 - Conducting Study of Training Simulations with an emphasis on the cost portion of the CTEA
 - To determine
 - What extent the Services maintain Life Cycle Cost data for large scale training simulations.
 - If line items contained in the cost estimates vary by Service.
 - If there is a need for further definition/standardization of line items included in the life cycle costs.
 - Target completion FY 99

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Cost Training Effectiveness Analysis (CTEA) Process

- IDA: CTEA- Effectiveness Orientation
 - Conducting Study of Training Simulations with emphasis on the effectiveness portion of the CTEA
 - To determine
 - An appropriate framework for cost-effectiveness analyses of large scale simulations.
 - Appropriate measures of performance for large scale simulations.
 - The extent to which the Services conduct cost-effectiveness analyses of large scale simulations.
 - Target completion FY 99

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Cost Training Effectiveness Analysis (CTEA) Process

- DMSO: Quantify the Impacts of M&S - M&S Master Plan Objective includes benefits to support investment
 - Develop a “Users Guide” for Outlining Policy and Procedures for use of M&S across Functional Areas
 - Produce a “Common Practices Guide” for use of M&S from Inception to Fielding
 - Initial Data Collection Complete, “The Utility of Modeling and Simulation: An Initial Data Collection”
 - Leverage the Training CTEA work as a prototypical effort across functions
- Incorporate into Revised M&S Master Plan

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Cost Training Effectiveness Analysis (CTEA) Process

- Army: AMSO Study - Phases I & II Methodology and Proof of Principle Completed
 - Benefits Initiative for M&S
 - Broader than Training Functional Area
 - Releasable after Army Internal Review
 - Work conducted with DMSO Cooperation

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The Benefits Initiative...

Phase I

-  Objectives Hierarchy
-  Metrics
-  Techniques to compute benefit

Phase

-  Proof of Principle

Phase

-  Application

Next Step

“...I have directed AMSO to coordinate the Army’s efforts to develop and implement a definable **process** by which **quantitative and qualitative M&S benefits** are captured enabling our better understanding, justification, and use of M&S **across the Army**.”

“...AMSO will develop a comprehensive M&S benefits methodology (or methodologies) which will provide a factual basis to **answer M&S benefits questions**.”

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Cost Training Effectiveness Analysis (CTEA) Process

- Navy: Learning Methodology for JSIMS
 - Formed Working Group of JSIMS Partners
 - Addresses the Behavioral Aspects of Training
 - Collaborative Team Across JSIMS Enterprise
 - R&D Effort that Precedes Effectiveness Determination

LMWG Products

- **Status of Products (May 99)**
 - **Learning Methodology Reference Document**
 - Third Draft in Editing
 - **LM System Level Use Case**
 - Effort started to Identify LM gaps in Planned System Level Use Cases or To Develop Unique LM SLUC
 - **Framework for Learning Effectiveness Assessment**
 - Draft Framework Published within Reference Document
 - **A definition of AAR features needed to implement LM precepts**
 - No Progress
 - **Technology Transition and Insertion Plan**
 - Effort initiated. Integrating effort with JPO insertion of DARPA ASTT work
 - **Pre-Exercise Development Workshop (May 25-26)**
 - Educate Developers / Explore Available Products for Infusion

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into ISIMS

Cost Training Effectiveness Analysis (CTEA) Process

- IG: Update and Progress Report
 - DoDD 1430.13, “Training Simulators and Devices” Being Revised/Rewritten to include CTEA for simulations
 - DMDC Technical Report and TCEF Database
 - Develop “How to Manual” and Guidance for TEA, May form basis for DoDI

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Cost Training Effectiveness Analysis (CTEA) Process

- Summary
 - Metrics, Processes, Policies and Guidelines are needed to Support CTEA for Future Training Systems
 - Separate Efforts now underway in Services and Agencies
 - Training FWG Sub-Group formed with community representation
 - Review DMDC Technical Report & TCEF
 - Provide Input and Review to other ongoing efforts
 - Provide Prototype / Participation for Training in Larger DMSO M&S Effort
 - Update DoDD 1430.13, *Training Simulators and Simulations*
 - Provide Update to Training Council and Response for IG

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